



Eric
Johnson/ENF/R8/USEPA/US
08/17/2006 07:35 AM

To Amy Swanson/ENF/R8/USEPA/US@EPA
cc
bcc
Subject Fw: Apex - Report

— Forwarded by Eric Johnson/ENF/R8/USEPA/US on 08/17/2006 07:35 AM —



Paul Glader
<pglader@hecla-mining.com>
>
06/18/2006 11:17 PM

To Eric Johnson/ENF/R8/USEPA/US@EPA
cc Chris Gypton <cgypton@hecla-mining.com>, "Doug Gibbs (E-mail)" <monster@peakpeak.com>
Subject Apex - Report

Eric
Attached is a report which summarizes the site investigations associated with our joint 5/23/06 Site Inspection. I have also attached copies of the sampling results. We will send a hard copy (colored) tomorrow by FedEx.

I will be out of the office all week - I should have email access - back in office Monday 6/26.

Paul

<<Apex Report 61806.pdf>>
<<Apex Soil pH TPH 52406.pdf>> <<Apex Soil pH TPH 60206.pdf>> <<Apex TCLP 10 52406.pdf>> <<Apex TCLP 52406.pdf>> <<Apex TCLP 60206.pdf>>



Apex Report 61806.pdf



Apex Soil pH TPH 52406.pdf



Apex Soil pH TPH 60206.pdf



Apex TCLP 10 52406.pdf



Apex TCLP 52406.pdf



Apex TCLP 60206.pdf



June 16, 2006

VIA EMAIL AND FedX

Mr. Eric R. Johnson
US EPA
999 18th Street, Suite 300
Denver, CO 80202-2466

RE: Follow-up of May 23, 2006 EPA/Hecla Site Inspection

Dear Eric:

During our inspection on May 23, 2006, a discolored area was noted down slope of the rock cover on the northeast side of the impoundment. In the interest of identification of the source of discoloration, I visited the site the following day May 24, 2006 and took several samples. I noted a small discolored area down slope of the rock cover on the southwest side of the impoundment. Additionally, I met Doug Gibbs of Monster Engineering, Inc. (MEI) at the site during the following week on June 1st and 2nd. Doug inspected both the northeast and southwest areas noted above, as well as the entire site. The MEI report is attached.

The attached as-built map notes the sample sites. The following samples were taken and analyzed for soil pH, TPH DRO and TCLP.

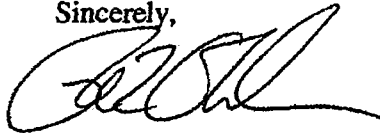
- 1 – Northeast - Hecla sampled 5/23 – Sample ID 3
 - MEI sampled 6/2 – Sample ID MEI 1 and MEI 2
- 2 – Northwest – Hecla sampled 5/23 – Sample ID 2
- 3 – Borrow – Hecla sampled 5/24 – Sample ID 1
- 4 – Southwest - Hecla sampled 5/24 – Sample ID 10
 - MEI sampled 6/2 – Sample ID MEI 3 and MEI 4

The results of the analyses are attached. The soil pH values are normal for the area. The TCLP values indicate there is no contamination. Note all TPH DRO values are non detect except those of two of the Southwest samples. It is strongly suspected that the small discolored area at the Southwest site is due to leakage of heavier motor or hydraulic oil. During the cover construction operation, the contractor's motor grader was parked in this area while awaiting mobilization off site for hydraulic system repairs.

Based on the site investigations by Hecla and MEI, the new GCL system appears to be working effectively and there are no signs of liquids leaking out of the impoundment. The source of the Northeast discolored area is due to the effects of precipitation. The source of the smaller discolored area to the Southwest appears to be leakage from construction equipment.

If you have any questions, please contact me at 208.769.4112.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Glader', with a large, sweeping flourish at the end.

Paul L. Glader
Manager Environmental Services

Cc: Chris Gypton
Doug Gibbs - MEI

MONSTER ENGINEERING INC
ENGINEERING DESIGN MANAGEMENT

3031 Bonner Spring Ranch Road
Lafayette, Colorado 80535

(970) 221-7177

fax (970) 224-0161

email: monster@peakpeak.com



MEMORANDUM

TO: Paul Glader (Hecla Mining Company)
FROM: Doug Gibbs (Monster Engineering Inc.)
DATE: 6/15/06
SUBJECT: June 1st and 2nd Site Visit – Apex Site

MEI conducted a limited geotechnical investigation of the Apex Site impoundment on June 1st and 2nd, 2006. In particular two areas of interest were inspected, one on the northeast and one on the southwest sides of the impoundment, and both associated with varying soil / moisture conditions at the toe of the rock covered outcrops.

On the surface both areas appeared to have soil moisture contents that were slightly higher than nearby soils, or odors which may have been associated with some type of petroleum product. Hecla requested that MEI investigate the site in general and these two areas in particular to attempt to determine:

- (1) the potential reason for the increased moisture content within the soils
- (2) the general limits to the area of soils with increased moisture contents
- (3) integrity of the lining system and tie-in between the new GCL liner and old asphaltic spray-on liner

Previous to MEI's site visit, Hecla collected several soil samples from the two areas of interest. MEI collected an additional four soil samples (labeled as MEI 1 through MEI 4) which were analyzed for pH, TCLP, and TPH DRO. Laboratory results for each sample will be reported by Hecla.

MEI's investigation consisted of reviewing recent precipitation data, visually inspecting the entire site including all surface drainage patterns (top, outcrops, diversion channels), excavating test holes down to the existing GCL liner, and collecting representative soil samples for field investigation and laboratory analysis.

Based on the results of this limited investigation MEI believes that the new GCL liner system appears to be working effectively and there are no signs of liquids leaking out of the impoundment either through the GCL liner, or upslope of the GCL / asphaltic spray on liner tie-in. The one foot to two foot thick soil cover layer above the GCL and the GCL liner appear to be working effectively with moisture from precipitation events draining in a controlled manner off the impoundment. Precipitation that infiltrates the soil cover layer, especially on the outcrops below the rock cover, collects near the toe of the outcrop on top of the GCL, wicks upward and outward towards the surface, and slowly evaporates.

Additionally, MEI believes that the areas on the southwest side of the impoundment with soil color variations appear to be locations where the Contractor parked leaking equipment prior to it being shipped off site. The soils appear to be very slightly contaminated with either hydraulic or engine oil.

Northeast Side Excavations and Observations

This specific location (approximate location shown on the attached map) was selected based on the area where soil color variation was noted (slightly darker and moister materials), and discussions with Hecla personnel concerning their prior site visit. A total of six holes were excavated on this side of the impoundment to determine the extent of the area with increased soil moisture. Four holes were excavated directly up the slope starting at the outslope toe (including the anchor trench) and then progressing uphill to approximately one-third the distance up the outslope. Two additional holes were excavated along the outslope toe to determine the extent (laterally) of the increased soil moisture content area. The overall area of slightly increased soil moisture contents on the northeast side was approximately 50 feet wide and 20 feet (up the outslope from the toe).

To investigate liner conditions and soil moisture the rock cover was first removed, then the soil cover layer was removed down to the GCL liner as shown in photographs included at the end of this memorandum. The diagram on the following page shows the geometry of the outslope and its various components.

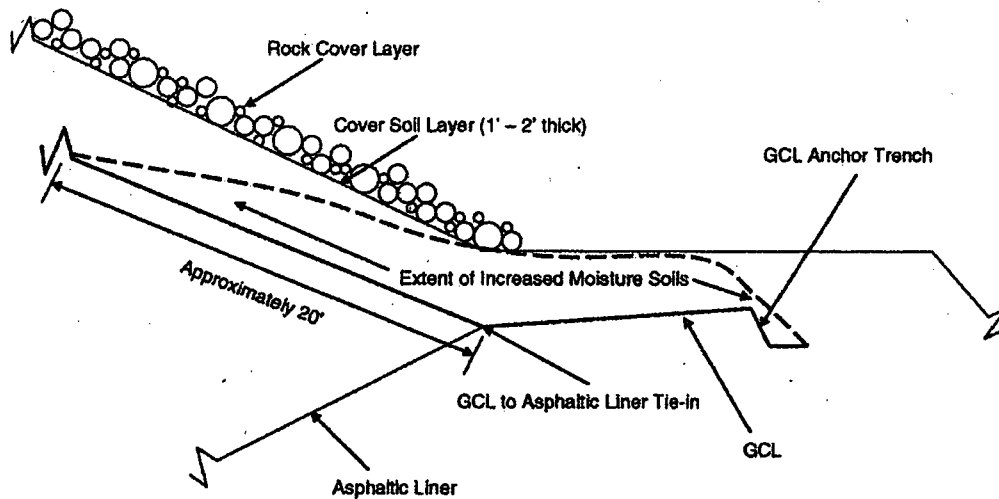
Soil Moisture Content

Soil moisture content increased with depth in each test hole. Soil moisture content also increased with proximity to the outslope toe (tie-in of the GCL liner to the old liner), which is also the toe of the rock cover. Soils immediately above the GCL along approximately the lower ten feet of the outslope were nearly saturated as would be expected if the soil cover layer and GCL were working properly.

Soil moisture contents decreased both nearer the surface (vertically upward from the GCL) and nearer the top of the impoundment outslope. Soils excavated from the test hole located furthest up the outslope were significantly drier and similar to the rest of the impoundment soil cover materials and therefore no further holes were excavated up the slope.

It was estimated that moisture contents transitioned to less than optimum at about 1/3 the distance up from the outslope toe (approximately 20 feet), and were significantly below optimum in the upper two-thirds of the outslope.

Based on observations of the top surface, the final surface grading and small berm around the edge of the impoundment likely allow for a significant portion of top surface to drain toward and pool at the top of the outslope at this northeast location (see attached photograph). Any runoff pooling in this area would infiltrate into the soil cover layer, then migrate down to the outslope toe on top of the GCL. From that point, depending on final geometry of the tie-in, excess moisture would pool and then migrate away from the impoundment towards the GCL anchor trench. This is apparently what has occurred at the northeast side of the impoundment at the area investigated by MEI.



Not to Scale

Liner Tie-In and Potential Damage

MEI found no evidence of leakage at the liner tie-in location (between the new GCL liner and old asphalt spray-on liner). If there had been a leak at this location, liquids would most likely not have traveled up the outslope on top of the GCL as far as noted in the field.

In all excavations, the GCL was intact and there were no signs of damage or leakage through the GCL. There was also no chemical or other waste processing odor associated with any of the materials excavated and inspected. Laboratory results from two soil samples (MEI 1 and MEI 2) collected in this area show that there is no contamination.

Surface Monitor Movement

It should be noted that since monitoring of the top surface elevation began (1/4/06), there has been no appreciable movement in the surface monuments at the Apex Site. Significant decreases in elevation could have meant large volume changes within the impoundment due to either (1) consolidation of enclosed materials, or (2) loss of liquid through leaks in the impoundment.

It appears that to date most "apparent" top surface movement can be attributed to surveying accuracy limitations as monitoring data have shown elevations of individual monuments both increasing and decreasing in very minor amounts from monitoring period to monitoring period. Settlement monitoring data has been collected by Alpha Engineering on 1/4/06, 2/8/06, 3/16/06, and 4/12/06.

There are currently ten monuments installed on the top surface. As shown in the table below, between installation and the last monitoring period (4/12/06), two monuments have not moved, four have decreased, and four have increased. Monument 3 is the closest to, and directly upslope from the area investigated on the northeast side of the impoundment.

Monument	Total Elevation Change Since 1/4/06 (feet)
1	-0.02
2	0.01
3	0.00
4	0.03
5	0.03
6	-0.01
7	-0.01
8	0.00
9	-0.03
10	0.01

Southwest Side Excavations

This specific location (approximate location shown on the attached map) was selected based on the area where soil color variation was noted (slightly darker), and discussions with Hecla personnel concerning their prior site visit. A total of two holes were excavated on this side of the impoundment, on in each of the areas where the surface soils were slightly darker than surrounding soils. The overall area of slight soil color variation was approximately five to 10 square feet in both areas (see attached photograph).

Soil Moisture Content / Odor

No increase in soil moisture content was found at either location, however due to slight hydrocarbon odor, one sample was collected from the surface to six inches in depth in the approximate center of each area of color variation. Laboratory results from these two soil samples (MEI 3 and MEI 4) collected in this area show that there is no contamination.

During one of MEI's last site visits during placement of the rock cover, a road grader was parked in this area. As this was a very old, and at that point a broken down piece of equipment, it is a possibility that this piece of equipment leaked or spilled hydraulic or engine oil at this location.

NE Side Excavation

(excavation from bottom of 3:1 to end of GCL as it drops off into the anchor trench at bottom of photo)



(two excavations further up the 3:1 outslope)



NE Side Excavation
(note increasing soil moisture content near toe of 3:1)



(note grey GCL liner in bottom – view into trench towards liner tie-in location)

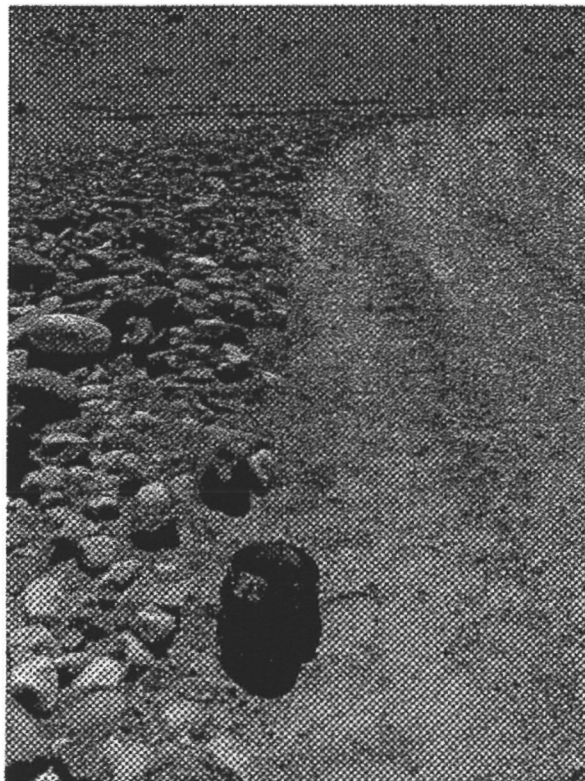


NE Side Excavation

(note slightly darker soil area on bench at toe of slope corresponding to increased soil moisture content)



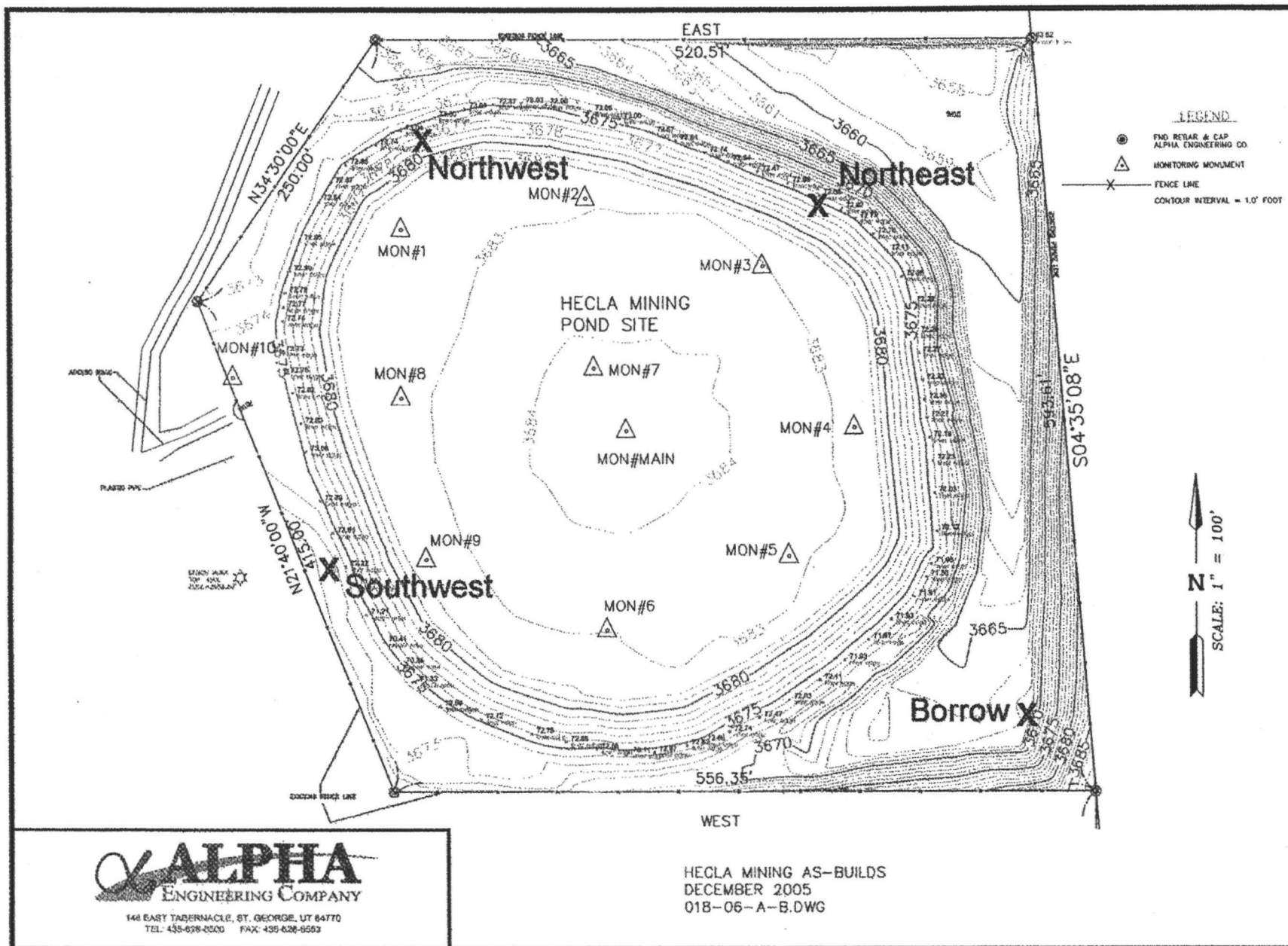
(top of 3:1 slope directly above investigation area – this was an area of ponding of runoff and flow into the rock cover)



SW Side Excavation

(note two slightly darker soil areas at toe of slope)





SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Hecla Mining Co.

SVL JOB: 122939

PROJECT:

SAMPLE: 509691

CLIENT SAMPLE ID: 10

Sample Collected: 5/24/06 7:00

Sample Receipt : 5/26/06

Matrix: SOIL

Date of Report : 6/02/06 As Received Basis

Determination	Result	Units	Dilution	Method	Analyzed
pH Soil	6.02			9045C	5/30/06
TPH-Diesel	<250.	mg/kg		8015M	6/01/06
TPH-Motor Oil	70500.	mg/kg		8015M	6/01/06

TPH SUBCONTRACTED

Reviewed By: _____

Date 6/2/06

6/02/06 10:43

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

Quality Control Report
Part I Prep Blank and Laboratory Control Sample

Client :Hecla Mining Co.						SVL JOB No: 122939		
Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found		LCS %R	Analysis Date
pH Soil	9045C	SOIL		<0.01	5.21	5.20	99.8	5/30/06

LEGEND:

LCS = Laboratory Control Sample

LCS %R = LCS Percent Recovery

N/A = Not Applicable

Client :Hecla Mining Co.						SVL JOB No: 122939			
Test Method Mtx		QC SAMPLE ID		Duplicate or Found	MSD RPD%	Matrix Spike		Analysis Date	
		Units	Result			Result	SPK ADD		%R
pH-S	9045C S 1		6.02	6.04	0.3	N/A	N/A	N/A	5/30/06

LEGEND:

RPD% = $(|SAM - DUP| / ((SAM + DUP) / 2)) * 100$ UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.

RPD% = $(|SPK - MSD| / ((SPK + MSD) / 2)) * 100$ M in Duplicate/MSD column indicates MSD.

SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 509691 Client Sample ID: 10

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Sta. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

HECLA MINING CO.

PAUL GLADER

6500 N. MINERAL DRIVE

COEUR D'ALENE, ID 83815

PROJECT: SVL #122939

Report Date: 02-Jun-06

Certificate of Analysis

Petroleum -TPH-D Extended by GC/FID (8015B modified)

Sample Name:	10	Analyte:	Diesel (DRO)	Result:	ND	Units:	mg/Kg	PQL:	250
Sample Location:		Analyte:	Lube Oil	Result:	70500	Units:	mg/Kg	PQL:	5000
Sampling Date:	5/24/2006								
Sampling Time:	7:00								
Date Received:	5/31/2006								
Extraction Date:	6/1/2006	TPH-D Surrogate (Hexacosane) Percent Recovery							85.2
Lab #:	06X1711-01	Surrogate Acceptance Range: 50-150							
Matrix:	SOIL								
Analysis Date TPH-D:	6/1/2006	Comments:							
Analyst:	SAT								
Percent Solids:	97.8								
Weight Basis:	Dry wt Basis								

Anatek labs, Inc. 1282 Alturas Dr. Moscow, ID 83843 (208)883-2839

Quality Control Report - TPHD/HCID by GC/FID

Analyte	Control T: Sample		Sample	Units	Spike	MS	%R	MSD	%R	RPD	%R LCL	%R UCL	RPD AL	Analyte Date
Diesel	LCS	BLANK	0	mg/Kg	100	84.7	84.7				50	150		6/1/2006
Diesel	MS	06X1712-02	0	mg/Kg	100	103	103.0	111	111.0	7.5	50	150	50	6/1/2006

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Hecla Mining Co.

PROJECT:

SVL JOB: 122940

SAMPLE: 509694

CLIENT SAMPLE ID: 1

Sample Collected: 5/23/06 1:00

Sample Receipt : 5/26/06

Matrix: SOIL

Date of Report : 6/02/06 As Received Basis

Determination	Result	Units	Dilution	Method	Analyzed
pH Soil	6.82			9045C	5/30/06
TPH-Diesel	<25	mg/kg		8015M	6/01/06
TPH-Motor Oil	<100	mg/kg		8015M	6/01/06

TPH SUBCONTRACTED

Reviewed By: Date 6/2/06
6/02/06 10:41

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Hecla Mining Co.

SVL JOB: 122940

PROJECT:

SAMPLE: 509695

CLIENT SAMPLE ID: 2

Sample Collected: 5/23/06 1:00

Sample Receipt : 5/26/06

Matrix: SOIL

Date of Report : 6/02/06 As Received Basis

Determination	Result	Units	Dilution	Method	Analyzed
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pH Soil	6.67			9045C	5/30/06
TPH-Diesel	<25	mg/kg		8015M	6/01/06
TPH-Motor Oil	<100	mg/kg		8015M	6/01/06

TPH SUBCONTRACTED

Reviewed By: _____

Date 6/2/06
6/02/06 10:41

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

Certificate: ID ID00019

CLIENT : Hecla Mining Co.

SVL JOB: 122940

PROJECT:

SAMPLE: 509696

CLIENT SAMPLE ID: 3

Sample Collected: 5/23/06 1:00

Sample Receipt : 5/26/06

Matrix: SOIL

Date of Report : 6/02/06 As Received Basis

Determination	Result	Units	Dilution	Method	Analyzed
pH Soil	6.48			9045C	5/30/06
TPH-Diesel	<25	mg/kg		8015M	6/01/06
TPH-Motor Oil	<100	mg/kg		8015M	6/01/06

TPH SUBCONTRACTED

Reviewed By: _____

Date 6/2/06

6/02/06 10:41

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

Client :Hecla Mining Co.							SVL JOB No: 122940	
Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found	LCS %R	Analysis Date	
pH Soil	9045C	SOIL		<0.01	5.21 5.20	99.8	5/30/06	

LEGEND:

LCS = Laboratory Control Sample

LCS %R = LCS Percent Recovery

N/A = Not Applicable

SVL ANALYTICAL, INC.

Quality Control Report
Part II Duplicate and Spike Analysis

Client :Hecla Mining Co.						SVL JOB No: 122940			
Test Method Mtx		QC SAMPLE ID	Duplicate	or	MSD	Matrix Spike		Analysis	
		Units	Found		RPD%	Result	SPK ADD	%R	Date
pH-S	9045C S	1	6.82		0.1	N/A	N/A	N/A	5/30/06

LEGEND:

RPD% = $\frac{(\text{SAM} - \text{DUP})}{((\text{SAM} + \text{DUP})/2)} * 100$ UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.RPD% = $\frac{(\text{SPK} - \text{MSD})}{((\text{SPK} + \text{MSD})/2)} * 100$ M in Duplicate/MSD column indicates MSD.SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added
QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 509694 Client Sample ID: 1

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

HECLA MINING CO.

PAUL GLADER

6500 N. MINERAL DRIVE

COEUR D' ALENE, ID 83815

PROJECT: SVL #122940

Report Date: 02-Jun-06

Certificate of Analysis

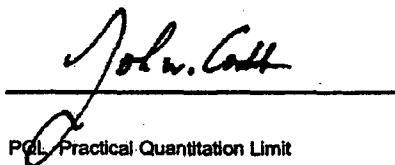
Petroleum -TPH-D Extended by GC/FID (8015B modified)

Sample Name:	1	Analyte:	Diesel (DRO)	Result:	ND	Units:	mg/Kg	PQL:	25
Sample Location:		Analyte:	Lube Oil	Result:	ND	Units:	mg/Kg	PQL:	100
Sampling Date:	5/23/2006								
Sampling Time:	13:00								
Date Received:	5/31/2006								
Extraction Date:	6/1/2006	TPH-D Surrogate (Hexacosane) Percent Recovery							75.6
Lab #:	06X1712-01	Surrogate Acceptance Range: 50-150							
Matrix:	SOIL								
Analysis Date TPH-D:	6/1/2006	Comments:							
Analyst:	SAT								
Percent Solids:	98.8								
Weight Basis:	Dry wt Basis								

Sample Name:	2	Analyte:	Diesel (DRO)	Result:	ND	Units:	mg/Kg	PQL:	25
Sample Location:		Analyte:	Lube Oil	Result:	ND	Units:	mg/Kg	PQL:	100
Sampling Date:	5/23/2006								
Sampling Time:	13:00								
Date Received:	5/31/2006								
Extraction Date:	6/1/2006	TPH-D Surrogate (Hexacosane) Percent Recovery							70.6
Lab #:	06X1712-02	Surrogate Acceptance Range: 50-150							
Matrix:	SOIL								
Analysis Date TPH-D:	6/1/2006	Comments:							
Analyst:	SAT								
Percent Solids:	97.9								
Weight Basis:	Dry wt Basis								

Sample Name:	3	Analyte:	Diesel (DRO)	Result:	ND	Units:	mg/Kg	PQL:	25
Sample Location:		Analyte:	Lube Oil	Result:	ND	Units:	mg/Kg	PQL:	100
Sampling Date:	5/23/2006								
Sampling Time:	13:00								
Date Received:	5/31/2006								
Extraction Date:	6/1/2006	TPH-D Surrogate (Hexacosane) Percent Recovery							72.9
Lab #:	06X1712-03	Surrogate Acceptance Range: 50-150							
Matrix:	SOIL								
Analysis Date TPH-D:	6/1/2006	Comments:							
Analyst:	SAT								
Percent Solids:	86.9								
Weight Basis:	Dry wt Basis								

Approved by:



ND Not Detected

PQL Practical Quantitation Limit

TPH-D Report

Page 1 of 1

Anatek labs, Inc. 1282 Alturas Dr. Moscow, ID 83843 (208)883-2839

Quality Control Report - TPHD/HCID by GC/FID

Analyte	Control T: Sample		Sample	Units	Spike	MS	%R	MSD	%R	RPD	%R LCL	%R UCL	RPD AL	Analyte Date
Diesel	LCS	BLANK	0	mg/Kg	100	84.7	84.7				50	150		8/1/2008
Diesel	MS	06X1712-02	0	mg/Kg	100	103	103.0	111	111.0	7.5	50	150	50	8/1/2008



Priority - TCLP over TPH DRO

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Hala Manoy
Contact: Paul Glaser
Address: 2000 State
6500 N. Main Drive Ste 200
Phone Number: Coeur d'Alene
FAX Number: 208.769.4112
208.769.4122

NOTES:

- 1) Ensure proper container packaging.
 - 2) Ship samples promptly following collection.
 - 3) Designate Sample Reject Disposition
- PO#:
Project Name:

Table 1. - Matrix Type

1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other (Specify)

FOR SVL USE ONLY

SVL JOB #

122934
#122940

Samplers Signature:

Lab Name: SVL Analytical, Inc. (208) 784-1258 FAX (208) 783-0891										Analyses Required										No Date or Time on Sample Labels RS 5.26.06 Comments		
Address: One Government Gulch, Kellogg, ID 83837-0929																						
Sample ID	Collection		Miscellaneous				Preservative(s)				TCLP											
	Date	Time	Collected by: (Init.)	Matrix Type From Table 1	No. of Containers	Sample Filtered ? Y/N	Unpreserved (Ice Only)	HNO3	HCL	H2SO4												NAOH
1																						5 day Turnaround
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
Relinquished by: <u>Don Holloway</u>			Date: <u>5/25/06</u>		Time: <u>1545</u>		Received by: <u>R. Bunch</u>		Date: <u>5/25/06</u>		Time: <u>15:45</u>											
Relinquished by:			Date:		Time:		Received by:		Date:		Time:											

* Sample Reject: [] Return [] Dispose [] Store (30 Days)

White: LAB COPY

Yellow: CUSTOMER COPY

SVL-COC 12/95

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83827-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTSCLIENT : Hecla Mining Co.
PROJECT:Sample Receipt: 6/08/06 Page 1 of 1
Report Date: 6/15/06 SVL JOB: 123212

SVL ID	CLIENT SAMPLE ID		pH-S 9045C
S512522	MEI 1	6/02/06	8.63
S512523	MEI 2	6/02/06	8.78
S512524	MEI 3	6/02/06	8.32
S512525	MEI 4	6/02/06	7.84
Soil Samples: As Received Basis			
Certificate: ID ID00019			
AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268			

Reviewed By: *[Signature]* Date: 6/15/06

Client :Hecla Mining Co.					SVL JOB No: 123212			
Test Method Mtx	QC SAMPLE ID		Duplicate or MSD		Matrix Spike		Analysis	
	Units	Result	Found	RPD%	Result	SPK ADD	%R	Date
pH-S 9045C S 1		8.63	8.64	0.1	N/A	N/A	N/A	6/13/06

LEGEND:

RPD% = $(|SAM - DUP| / ((SAM + DUP) / 2)) * 100$ UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.

RPD% = $(|SPK - MSD| / ((SPK + MSD) / 2)) * 100$ M in Duplicate/MSD column indicates MSD.

SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 512522 Client Sample ID: MEI 1

SVL ANALYTICAL, INC.

Quality Control Report
Part I Prep Blank and Laboratory Control Sample

Client :Hecla Mining Co.							SVL JOB No: 123212
Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found	LCS %R	Analysis Date
pH Soil	9045C	SOIL		N/A	5.21 5.21	100.0	6/13/06

LEGEND:

LCS = Laboratory Control Sample

LCS %R = LCS Percent Recovery

N/A = Not Applicable

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

HECLA MINING CO.

PAUL GLADER

6500 N. MINERAL DRIVE

COEUR D' ALENE, ID 83815

PROJECT: SVL #123212

Report Date: 15-Jun-06

Certificate of Analysis

Petroleum -TPH-D Extended by GC/FID (8015B modified)

Sample Name:	MEI 1	Analyte:	Result:	Units:	PQL:
Sample Location:		Diesel (DRO)	ND	mg/Kg	25
Sampling Date:	6/2/2008	Lube Oil	ND	mg/Kg	100
Sampling Time:	11:00				
Date Received:	6/8/2006				
Extraction Date:	6/12/2006	TPH-D Surrogate (Hexacosane) Percent Recovery			81.4
Lab #:	06X1833-01	Surrogate Acceptance Range:	50-150		
Matrix:	SOIL				
Analysis Date TPH-D:	6/13/2006	Comments:			
Analyst:	SAT				
Percent Solids:	82.5				
Weight Basis:	Dry wt Basis				

Sample Name:	MEI 2	Analyte:	Result:	Units:	PQL:
Sample Location:		Diesel (DRO)	ND	mg/Kg	25
Sampling Date:	6/2/2006	Lube Oil	ND	mg/Kg	100
Sampling Time:	11:00				
Date Received:	6/8/2006				
Extraction Date:	6/12/2006	TPH-D Surrogate (Hexacosane) Percent Recovery			78.8
Lab #:	06X1833-02	Surrogate Acceptance Range:	50-150		
Matrix:	SOIL				
Analysis Date TPH-D:	6/13/2006	Comments:			
Analyst:	SAT				
Percent Solids:	83				
Weight Basis:	Dry wt Basis				

Sample Name:	MEI 3	Analyte:	Result:	Units:	PQL:
Sample Location:		Diesel (DRO)	ND	mg/Kg	25
Sampling Date:	6/2/2006	Lube Oil	ND	mg/Kg	100
Sampling Time:	12:00				
Date Received:	6/9/2006				
Extraction Date:	6/12/2006	TPH-D Surrogate (Hexacosane) Percent Recovery			79.2
Lab #:	06X1833-03	Surrogate Acceptance Range:	50-150		
Matrix:	SOIL				
Analysis Date TPH-D:	6/13/2006	Comments:			
Analyst:	SAT				
Percent Solids:	87.8				
Weight Basis:	Dry wt Basis				

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-8246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

HECLA MINING CO.

PAUL GLADER

6500 N. MINERAL DRIVE

COEUR D'ALENE, ID 83815

PROJECT: SVL #123212


Report Date: 15-Jun-06

Certificate of Analysis

Petroleum -TPH-D Extended by GC/FID (8015B modified)

Sample Name:	MEI 4	Analyte:	Result:	Unit:	PQL:
Sample Location:		Diesel (DRO)	ND	mg/Kg	250
Sampling Date:	6/2/2006	Lube Oil	18300	mg/Kg	1000
Sampling Time:	12:00				
Date Received:	6/9/2006				
Extraction Date:	6/12/2006	TPH-D Surrogate (Hexacosane) Percent Recovery			87.8
Lab #:	06X1833-04	Surrogate Acceptance Range:	50-150		
Matrix:	SOIL	Comments:			
Analysis Date TPH-D:	6/14/2006				
Analyst:	SAT				
Percent Solids:	87.3				
Weight Basis:	Dry wt Basis				

Approved by:



ND Not Detected

PQL Practical Quantitation Limit

TPH-D Report

Page 2 of 2

Anatek labs, Inc. 1282 Alturas Dr. Moscow, ID 83843 (208)883-2839

Quality Control Report - TPHD/HCID by GC/FID

Analyte	Control Type	Sample	Sample	Units	Spike	MS	%R	MSD	%R	RPD	%R LCL	%R UCL	RPD AL	Analysis Date
Diesel	LCS	BLANK	0	mg/Kg	200	157	78.5				50	150		6/13/2006
Diesel	MS	06X1772-02	0	mg/Kg	200	151	75.5	155	77.5	2.8	50	150	50	6/13/2006

Cooler temp N/A 6-8-06 11:55 RS



CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: HELLA MINING CO

Contact: PAUL GLADEK

Address: _____

Phone Number: 208-769-4112

FAX Number: 208-769-4122

NOTES:

- 1) Ensure proper container packaging.
- 2) Ship samples promptly following collection.
- 3) Designate Sample Reject Disposition

PCW

Project Name: _____

Table 1. - Matrix Type

- 1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Wash, 7 = Other (Specify) _____

FOR SVL USE ONLY

SVL JOB #

123212

Sampler's Signature: _____

Lab Name: <u>SVL Analytical, Inc.</u> (208) 769-4112 FAX (208) 769-4122										Analyses Required				Comments		
Address: <u>One Government Center, Kellogg, ID 83841-0729</u>																
Sample ID	Date	Time	Collected by: (Initials)	Matrix Type: (From Table 1)	No. of Containers	Sample Filtered? Y/N	Preservative(s) (See Only)	HTOX	HCL	H2SO4	HAOH	Other (Specify)	Soil PA		TCLP	TPH DLO
1. MEI 1	6/2/06	11:00	DG	3									X	X	X	NO Time on Sample ID RS 6-8-06 5 DAY TURNAROUND " " "
2. MEI 2	"	"	"	3									X	X	X	
3. MEI 3	"	12:00	"	3									X	X	X	
4. MEI 4	"	12:00	"	3									X	X	X	
5.																
6.																
7.																
8.																
9.																
10.																
Relinquished by: <u>Dan O. Gibbs</u>			Date: <u>6/7/06</u>		Time: <u>2:00</u>		Received by: <u>Robert Strubling</u>			Date: <u>6-8-06</u>		Time: <u>11:55</u>				
Relinquished by: <u>Robert Strubling</u>			Date: <u>6-8-06</u>		Time: <u>2:00</u>		Received by: _____			Date: _____		Time: _____				

* Sample Reject: [] Return [] Dispose [] Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

SVL-COC 12/95

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : Hecla Mining Co.

SVL JOB # : 122935

SVL SAMPLE # : 509672

CLIENT SAMPLE ID: 10

Sample Collected: 5/24/06 7:00

Sample Receipt : 5/26/06

Date of Report : 6/02/06

Sample Matrix: Solid Waste

Extraction : TCLP **

Extracted: 5/31/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	6/01/06
Barium	1.32	mg/L Ext		100.0	6010B	6/01/06
Cadmium	<0.0100	mg/L Ext		1.0	6010B	6/01/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	6/01/06
Lead	<0.050	mg/L Ext		5.0	6010B	6/01/06
Selenium	0.07	mg/L Ext		1.0	6010B	6/01/06

** Sample extracted according to EPA method 1311 (TCLP).

Tests: TCLP METALS-RCRA

Certificate: ID ID00019

Reviewed By: _____

Date 6/2/06

6/02/06 11:48

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

Quality Control Report
Part I Prep Blank and Laboratory Control Sample

Client :Hecla Mining Co.					SVL JOB No: 122935			
Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found		LCS %R	Analysis Date
Silver	6010B	ESOIL	mg/L Ext	<0.0500	1.00	0.986	98.6	6/01/06
Arsenic	6010B	ESOIL	mg/L Ext	<0.050	1.00	1.06	106.0	6/01/06
Barium	6010B	ESOIL	mg/L Ext	<1.00	20.0	19.7	98.5	6/01/06
Cadmium	6010B	ESOIL	mg/L Ext	<0.0100	0.200	0.194	97.0	6/01/06
Chromium	6010B	ESOIL	mg/L Ext	<0.0500	1.00	1.04	104.0	6/01/06
Lead	6010B	ESOIL	mg/L Ext	<0.050	1.00	1.02	102.0	6/01/06
Selenium	6010B	ESOIL	mg/L Ext	<0.05	0.20	0.20	100.0	6/01/06
Mercury	7470A	ESOIL	mg/L Ext	<0.00020	0.00500	0.00538	107.6	6/01/06

LEGEND:

LCS = Laboratory Control Sample

LCS %R = LCS Percent Recovery

N/A = Not Applicable

SVL ANALYTICAL, INC.

Quality Control Report
Part II Duplicate and Spike Analysis

Client :Hecla Mining Co.							SVL JOB No: 122935				
Test Method Mtx		QC SAMPLE ID		Duplicate or		MSD	Matrix Spike			Analysis	
		Units	Result	Found		RPD%	Result	SPK ADD	%R	Date	
Ag	6010B E 1	mg/L Ex	<0.0500	0.985	M	10.1	1.09	1.00	109.0	6/01/06	
As	6010B E 1	mg/L Ex	<0.050	0.928	M	12.3	1.05	1.00	105.0	6/01/06	
Ba	6010B E 1	mg/L Ex	1.32	17.8	M	10.1	19.7	20.0	91.9	6/01/06	
Cd	6010B E 1	mg/L Ex	<0.0100	0.176	M	9.7	0.194	0.200	97.0	6/01/06	
Cr	6010B E 1	mg/L Ex	<0.0500	0.892	M	9.0	0.976	1.00	97.6	6/01/06	
Pb	6010B E 1	mg/L Ex	<0.050	0.829	M	9.4	0.911	1.00	91.1	6/01/06	
Se	6010B E 1	mg/L Ex	0.07	0.25	M	7.7	0.27	0.200	100.0	6/01/06	
Hg	7470A E 1	mg/L Ex	<0.00020	0.00117	M	11.8	0.00104	0.0010	104.0	6/01/06	

LEGEND:

RPD% = $\frac{(|SAM - DUP|)}{((SAM + DUP)/2)} * 100$ UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.

RPD% = $\frac{(|SPK - MSD|)}{((SPK + MSD)/2)} * 100$ M in Duplicate/MSD column indicates MSD.

SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 509672 Client Sample ID: 10

Cooler Temp N/A 5.26.06 9:20 RS



Priority - TCLP over TPH DRO

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Hack Mining
 Contact: Paul Glaser
 Address: _____
 Phone Number: 208-769-4112
 FAX Number: 208-769-4122

NOTES:
 1) Ensure proper container packaging.
 2) Ship samples promptly following collection.
 * 3) Designate Sample Reject Disposition
 PO#:
 Project Name:

Table 1. -- Matrix Type
 1 = Surface Water, 2 = Ground Water
 3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
 6 = Waste, 7 = Other (Specify) _____

FOR SVL USE ONLY
 SVL JOB #
122935

Samplers Signature: _____

Lab Name: SVL Analytical, Inc. (208) 784-1258 FAX (208) 783-0891												Analyses Required		Comments				
Address: One Government Gulch, Kellogg, ID 83837-0929																		
Sample ID	Collection		Miscellaneous			Preservative(s)						Soil PH	TCLP/DOCA	TPH DRO	per g/l	5/26/06		
	Date	Time	Collected by: (Init.)	Matrix Type From Table 1	No. of Containers	Sample Filtered ? Y/N	Unpreserved (Ice Only)	HNO3	HCL	H2SO4	NAOH						Other (Specify)	
10	5/25/06	7:00	PB	3														NO DATE or time on Sample Label RS. 5.26.06
2.																		5 Day Turnaround S
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
Relinquished by: <u>Don Holland</u>			Date: <u>5/25/06</u>			Time: <u>1545</u>			Received by: <u>X Bagnax WPL</u>			Date: <u>5/25/06</u>			Time: <u>15:45</u>			
Relinquished by: _____			Date: _____			Time: _____			Received by: <u>Robin Strickling</u>			Date: <u>5-26-06</u>			Time: <u>9:20</u>			

* Sample Reject: | | Return | | Dispose | | Store (30 Days)

White: LAB COPY

Yellow: CUSTOMER COPY

SVL-COC 12/95

TRANSMISSION VERIFICATION REPORT

TIME : 05/26/2006 11:23
 NAME : SVL ANALYTICAL
 FAX : 2087830891
 TEL : 2087841258
 SER.# : BROF3J496071

DATE, TIME 05/26 11:23
 FAX NO./NAME 97694122
 DURATION 00:00:16
 PAGE(S) 01
 RESULT OK
 MODE FINE
 ECM

Page 1 of 1

SVL ANALYTICAL, INC.
 nent Gulch - Kellogg, ID 83837-0929

RUSH! SOIL TCLP RCRA
 SVL JOB No: 122935
 Received: 5/26/06
 Expected Due date: 6/02/06

1) invoice: SAME

Fax:

By Received	Sample Comments
5/26/06	Tests:TCLP METALS-RCRA
5/26/06	Tests:TCLP METALS-RCRA
PG 5/26/06	Tests:TCLP METALS-RCRA

Container temp not measured upon receipt.

after job completion.
 , then you will receive a letter requesting disposal options.

If you have questions regarding the receipt of these samples. 5/26/06 10:16

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : Hecla Mining Co.

SVL JOB # : 122934

SVL SAMPLE # : 509665

CLIENT SAMPLE ID: 1

Sample Collected: 5/23/06 1:00

Sample Matrix: Solid Waste

Sample Receipt : 5/26/06

Extraction : TCLP **

Date of Report : 6/02/06

Extracted: 5/31/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	6/01/06
Barium	1.59	mg/L Ext		100.0	6010B	6/01/06
Cadmium	<0.0100	mg/L Ext		1.0	6010B	6/01/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	6/01/06
Lead	<0.050	mg/L Ext		5.0	6010B	6/01/06
Selenium	0.08	mg/L Ext		1.0	6010B	6/01/06

** Sample extracted according to EPA method 1311 (TCLP).

Tests: TCLP METALS-RCRA

Certificate: ID ID00019

Reviewed By: 

Date 6/2/06

6/02/06 11:46

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : Hecla Mining Co.

SVL JOB # : 122934

SVL SAMPLE # : 509666

CLIENT SAMPLE ID: 2

Sample Collected: 5/23/06 1:00

Sample Matrix: Solid Waste

Sample Receipt : 5/26/06

Extraction : TCLP **

Date of Report : 6/02/06

Extracted: 5/31/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	6/01/06
Barium	1.06	mg/L Ext		100.0	6010B	6/01/06
Cadmium	0.0131	mg/L Ext		1.0	6010B	6/01/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	6/01/06
Lead	<0.050	mg/L Ext		5.0	6010B	6/01/06
Selenium	<0.05	mg/L Ext		1.0	6010B	6/01/06

** Sample extracted according to EPA method 1311 (TCLP).

Tests: TCLP METALS-RCRA

Certificate: ID ID00019

Reviewed By: _____

Date 6/2/06

6/02/06 11:46

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : Hecla Mining Co.

SVL JOB # : 122934

SVL SAMPLE # : 509667

CLIENT SAMPLE ID: 3

Sample Collected: 5/23/06 1:00

Sample Matrix: Solid Waste

Sample Receipt : 5/26/06

Extraction : TCLP **

Date of Report : 6/02/06

Extracted: 5/31/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	6/01/06
Barium	1.24	mg/L Ext		100.0	6010B	6/01/06
Cadmium	<0.0100	mg/L Ext		1.0	6010B	6/01/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	6/01/06
Lead	<0.050	mg/L Ext		5.0	6010B	6/01/06
Selenium	<0.05	mg/L Ext		1.0	6010B	6/01/06

** Sample extracted according to EPA method 1311 (TCLP).

Tests: TCLP METALS-RCRA

Certificate: ID ID00019

Reviewed By: _____

Date 6/2/06

6/02/06 11:47

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

Client :Hecla Mining Co.						SVL JOB No: 122934		
Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found	LCS %R	Analysis Date	
Silver	6010B	ESOIL	mg/L Ext	<0.0500	1.00 0.986	98.6	6/01/06	
Arsenic	6010B	ESOIL	mg/L Ext	<0.050	1.00 1.06	106.0	6/01/06	
Barium	6010B	ESOIL	mg/L Ext	<1.00	20.0 19.7	98.5	6/01/06	
Cadmium	6010B	ESOIL	mg/L Ext	<0.0100	0.200 0.194	97.0	6/01/06	
Chromium	6010B	ESOIL	mg/L Ext	<0.0500	1.00 1.04	104.0	6/01/06	
Lead	6010B	ESOIL	mg/L Ext	<0.050	1.00 1.02	102.0	6/01/06	
Selenium	6010B	ESOIL	mg/L Ext	<0.05	0.20 0.20	100.0	6/01/06	
Mercury	7470A	ESOIL	mg/L Ext	<0.00020	0.00500 0.00538	107.6	6/01/06	

LEGEND:

LCS = Laboratory Control Sample

LCS %R = LCS Percent Recovery

N/A = Not Applicable

Client :Hecla Mining Co.							SVL JOB No: 122934			
Test Method Mtx		QC SAMPLE ID		Duplicate or MSD		Matrix Spike			Analysis	
		Units	Result	Found		RPD%	Result	SPK ADD	%R	Date
Ag	6010B E	1 mg/L Ex	<0.0500	1.08	M	0.0	1.08	1.00	108.0	6/01/06
As	6010B E	1 mg/L Ex	<0.050	0.996	M	1.4	1.01	1.00	101.0	6/01/06
Ba	6010B E	1 mg/L Ex	1.59	19.9	M	1.0	19.7	20.0	90.6	6/01/06
Cd	6010B E	1 mg/L Ex	<0.0100	0.189	M	0.5	0.188	0.200	94.0	6/01/06
Cr	6010B E	1 mg/L Ex	<0.0500	0.961	M	1.5	0.976	1.00	97.6	6/01/06
Pb	6010B E	1 mg/L Ex	<0.050	0.892	M	0.4	0.896	1.00	89.6	6/01/06
Se	6010B E	1 mg/L Ex	0.08	0.30	M	14.3	0.26	0.200	90.0	6/01/06
Hg	7470A E	1 mg/L Ex	<0.00020	0.00108	M	3.6	0.00112	0.0010	112.0	6/01/06

LEGEND:

RPD% = $\left(\frac{|\text{SAM} - \text{DUP}|}{((\text{SAM} + \text{DUP})/2)} \right) * 100$ UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.

RPD% = $\left(\frac{|\text{SPK} - \text{MSD}|}{((\text{SPK} + \text{MSD})/2)} \right) * 100$ M in Duplicate/MSD column indicates MSD.

SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 509665 Client Sample ID: 1



Priority - TCLP over TPH DRO

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Hack Maw
Contact: Paul Glaser
Address: 3000 State
6500 N Main Drive Ste 200
Phone Number: Coeur d'Alene
FAX Number: 208.769.4112
208.769.4122

NOTES:

- 1) Ensure proper container packaging.
- 2) Ship samples promptly following collection.
- 3) Designate Sample Reject Disposition

PO#:

Project Name:

Table 1. - Matrix Type

- 1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other (Specify) _____

FOR SVL USE ONLY

SVL JOB #

122934

Samplers Signature:

Lab Name: SVL Analytical, Inc. (208) 784-1258 FAX (208) 783-0891												Analyses Required		No Date or Time on Sample Labels RS 5.26.06 Comments			
Address: One Government Gulch, Kellogg, ID 83837-0929																	
Sample ID	Collection		Collected by: (Init.)	Miscellaneous			Preservative(s)					Soil PH	TCLP	TPH DRO			
	Date	Time		Matrix Type From Table 1	No. of Containers	Sample Filtered ? Y/N	Unpreserved (Ice Only)	HNO3	HCL	H2SO4	NAOH				Other (Specify)		
1	5/25/06	1:00 PM		3	1												5 day turnaround
2	5/25/06	1:00 PM		3	1												
3	5/25/06	1:00 PM		3	1												
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Relinquished by: <u>Paul Glaser</u>						Date: <u>5/25/06</u>		Time: <u>1:45</u>		Received by: <u>[Signature]</u>				Date: <u>05/25/06</u>		Time: <u>15:45</u>	
Relinquished by:						Date:		Time:		Received by:				Date:		Time:	

* Sample Reject: [] Return [] Dispose [] Store (30 Days)

White: LAB COPY

Yellow: CUSTOMER COPY

SVL-COC 12/95

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : Hecla Mining Co.

SVL JOB # : 122935

SVL SAMPLE # : 509672

CLIENT SAMPLE ID: 10

Sample Collected: 5/24/06 7:00

Sample Matrix: Solid Waste

Sample Receipt : 5/26/06

Extraction : TCLP **

Date of Report : 6/02/06

Extracted: 5/31/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	6/01/06
Barium	1.32	mg/L Ext		100.0	6010B	6/01/06
Cadmium	<0.0100	mg/L Ext		1.0	6010B	6/01/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	6/01/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	6/01/06
Lead	<0.050	mg/L Ext		5.0	6010B	6/01/06
Selenium	0.07	mg/L Ext		1.0	6010B	6/01/06

** Sample extracted according to EPA method 1311 (TCLP).

Tests: TCLP METALS-RCRA

Certificate: ID ID00019

Reviewed By: 

Date

6/2/06

6/02/06 11:48

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

Client :Hecla Mining Co.					SVL JOB No: 122935			
Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found		LCS %R	Analysis Date
Silver	6010B	ESOIL	mg/L Ext	<0.0500	1.00	0.986	98.6	6/01/06
Arsenic	6010B	ESOIL	mg/L Ext	<0.050	1.00	1.06	106.0	6/01/06
Barium	6010B	ESOIL	mg/L Ext	<1.00	20.0	19.7	98.5	6/01/06
Cadmium	6010B	ESOIL	mg/L Ext	<0.0100	0.200	0.194	97.0	6/01/06
Chromium	6010B	ESOIL	mg/L Ext	<0.0500	1.00	1.04	104.0	6/01/06
Lead	6010B	ESOIL	mg/L Ext	<0.050	1.00	1.02	102.0	6/01/06
Selenium	6010B	ESOIL	mg/L Ext	<0.05	0.20	0.20	100.0	6/01/06
Mercury	7470A	ESOIL	mg/L Ext	<0.00020	0.00500	0.00538	107.6	6/01/06

LEGEND:

LCS = Laboratory Control Sample

LCS %R = LCS Percent Recovery

N/A = Not Applicable

Client :Hecla Mining Co.				SVL JOB No: 122935						
Test Method Mtx		QC SAMPLE ID		Duplicate or		MSD	Matrix Spike			Analysis
		Units	Result	Found		RPD%	Result	SPK ADD	%R	Date
Ag	6010B E	1 mg/L Ex	<0.0500	0.985	M	10.1	1.09	1.00	109.0	6/01/06
As	6010B E	1 mg/L Ex	<0.050	0.928	M	12.3	1.05	1.00	105.0	6/01/06
Ba	6010B E	1 mg/L Ex	1.32	17.8	M	10.1	19.7	20.0	91.9	6/01/06
Cd	6010B E	1 mg/L Ex	<0.0100	0.176	M	9.7	0.194	0.200	97.0	6/01/06
Cr	6010B E	1 mg/L Ex	<0.0500	0.892	M	9.0	0.976	1.00	97.6	6/01/06
Pb	6010B E	1 mg/L Ex	<0.050	0.829	M	9.4	0.911	1.00	91.1	6/01/06
Se	6010B E	1 mg/L Ex	0.07	0.25	M	7.7	0.27	0.200	100.0	6/01/06
Hg	7470A E	1 mg/L Ex	<0.00020	0.00117	M	11.8	0.00104	0.0010	104.0	6/01/06

LEGEND:

RPD% = $(\frac{SAM - DUP}{((SAM + DUP)/2}) * 100)$ UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.

RPD% = $(\frac{SPK - MSD}{((SPK + MSD)/2}) * 100)$ M in Duplicate/MSD column indicates MSD.

SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 509672 Client Sample ID: 10

cooler temp N/A 5.26.06 9:20 RS



Priority - TCLP over TPHORO

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Hack Mining
 Contact: Paul Glaser
 Address: _____

Phone Number: 208.769.4112
 FAX Number: 208.769.4122

NOTES:

- 1) Ensure proper container packaging.
 - 2) Ship samples promptly following collection.
 - * 3) Designate Sample Reject Disposition
- PO#: _____
 Project Name: _____

Table 1. - Matrix Type

1 = Surface Water, 2 = Ground Water
 3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
 6 = Waste, 7 = Other (Specify) _____

FOR SVL USE ONLY

SVL JOB #

122935

Samplers Signature: _____

Lab Name: SVL Analytical, Inc. (208) 784-1258 FAX (208) 783-0891										Analyses Required		NO DATE or Time on Sample Label RS. 5.26.06				
Address: One Government Gulch, Kellogg, ID 83837-0929																
Sample ID	Collection		Miscellaneous			Preservative(s)				Soil PH	TCLP/PCRA	TPH ORO	per g/L	5/26/06	Comments	
	Date	Time	Collected by: (Init.)	Matrix Type From Table 1	No. of Containers	Sample Filtered? Y/N	Unpreserved (Ice Only)	HNO3	HCL							H2SO4
1. <u>10</u>	<u>5/25/06</u>	<u>7am</u>	<u>PB</u>	<u>3</u>												5 Day Turnaround S
2.																
3.																
4.																
5.																
6.																
7.																
8.																
9.																
10.																
Relinquished by: <u>Dave Holland</u>			Date: <u>5/25/06</u>	Time: <u>1545</u>	Received by: <u>J. Bingham</u>			Date: <u>5/25/06</u>	Time: <u>1545</u>	Received by: <u>Bob Strickling</u>			Date: <u>5/26/06</u>	Time: <u>9:20</u>		

* Sample Reject: | | Return | | Dispose | | Store (30 Days)

White: LAB COPY

Yellow: CUSTOMER COPY

SVL-COC 12/95

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : Hecla Mining Co.

SVL JOB # : 123214

SVL SAMPLE # : 512536

CLIENT SAMPLE ID: MEI 1

Sample Collected: 6/02/06 11:00

Sample Receipt : 6/08/06

Date of Report : 6/16/06

Sample Matrix: Solid Waste

Extraction : TCLP **

Extracted: 6/13/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	6/14/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	6/14/06
Barium	<1.00	mg/L Ext		100.0	6010B	6/14/06
Cadmium	<0.0100	mg/L Ext		1.0	6010B	6/14/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	6/14/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	6/15/06
Lead	<0.050	mg/L Ext		5.0	6010B	6/14/06
Selenium	0.07	mg/L Ext		1.0	6010B	6/14/06

** Sample extracted according to EPA method 1311 (TCLP).

Tests: TCLP METALS-RCRA|

Certificate: ID ID00019

Reviewed By: _____

Date

6/16/06

6/16/06 14:01

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : Hecla Mining Co.

SVL JOB # : 123214

CLIENT SAMPLE ID: MEI 2

SVL SAMPLE # : 512537

Sample Collected: 6/02/06 11:00

Sample Matrix: Solid Waste

Sample Receipt : 6/08/06

Extraction : TCLP **

Date of Report : 6/16/06

Extracted: 6/13/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	6/14/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	6/14/06
Barium	<1.00	mg/L Ext		100.0	6010B	6/14/06
Cadmium	<0.0100	mg/L Ext		1.0	6010B	6/14/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	6/14/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	6/15/06
Lead	<0.050	mg/L Ext		5.0	6010B	6/14/06
Selenium	<0.05	mg/L Ext		1.0	6010B	6/14/06

** Sample extracted according to EPA method 1311 (TCLP).

Tests: TCLP METALS-RCRA

Certificate: ID ID00019

Reviewed By: 

Date 6/16/06

6/16/06 14:01

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT	: Hecla Mining Co.	SVL JOB #	: 123214
CLIENT SAMPLE ID:	MEI 3	SVL SAMPLE #	: 512538
Sample Collected:	6/02/06 12:00	Sample Matrix:	Solid Waste
Sample Receipt	: 6/08/06	Extraction	: TCLP **
Date of Report	: 6/16/06	Extracted:	6/13/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	6/14/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	6/14/06
Barium	1.15	mg/L Ext		100.0	6010B	6/14/06
Cadmium	<0.0100	mg/L Ext		1.0	6010B	6/14/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	6/14/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	6/15/06
Lead	<0.050	mg/L Ext		5.0	6010B	6/14/06
Selenium	<0.05	mg/L Ext		1.0	6010B	6/14/06

** Sample extracted according to EPA method 1311 (TCLP).

Tests: TCLP METALS-RCRA
Certificate: ID ID00019

Reviewed By: _____

Date

6/16/06 14:01

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : Hecla Mining Co.

SVL JOB # : 123214

SVL SAMPLE # : 512539

CLIENT SAMPLE ID: MEI 4

Sample Collected: 6/02/06 12:00

Sample Receipt : 6/08/06

Date of Report : 6/16/06

Sample Matrix: Solid Waste

Extraction : TCLP **

Extracted: 6/13/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	6/14/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	6/14/06
Barium	1.07	mg/L Ext		100.0	6010B	6/14/06
Cadmium	<0.0100	mg/L Ext		1.0	6010B	6/14/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	6/14/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	6/15/06
Lead	<0.050	mg/L Ext		5.0	6010B	6/14/06
Selenium	<0.05	mg/L Ext		1.0	6010B	6/14/06

** Sample extracted according to EPA method 1311 (TCLP).

Tests: TCLP METALS-RCRA|

Certificate: ID ID00019

Reviewed By: _____

Date

6/16/06 14:01

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

Quality Control Report
Part I Prep Blank and Laboratory Control Sample

Client :Hecla Mining Co.					SVL JOB No: 123214			Analysis
Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found	LCS %R	Date	
Silver	6010B	ESOIL	mg/L Ext	<0.0500	1.00	1.04	104.0	6/14/06
Arsenic	6010B	ESOIL	mg/L Ext	<0.050	1.00	1.05	105.0	6/14/06
Barium	6010B	ESOIL	mg/L Ext	<1.00	20.0	19.7	98.5	6/14/06
Cadmium	6010B	ESOIL	mg/L Ext	<0.0100	0.200	0.197	98.5	6/14/06
Chromium	6010B	ESOIL	mg/L Ext	<0.0500	1.00	1.00	100.0	6/14/06
Lead	6010B	ESOIL	mg/L Ext	<0.050	1.00	1.01	101.0	6/14/06
Selenium	6010B	ESOIL	mg/L Ext	<0.05	0.20	0.18	90.0	6/14/06
Mercury	7470A	ESOIL	mg/L Ext	<0.00020	0.00500	0.00497	99.4	6/15/06

LEGEND:

LCS = Laboratory Control Sample

LCS %R = LCS Percent Recovery

N/A = Not Applicable

6/16/06 14:00

SVL ANALYTICAL, INC.

Quality Control Report
Part II Duplicate and Spike Analysis

Client :Hecla Mining Co.						SVL JOB No: 123214				
Test Method Mtx	QC SAMPLE ID		Result	Duplicate or		MSD RPD%	Matrix Spike			Analysis Date
	Units			Found			Result	SPK ADD	%R	
Ag	6010B E	1 mg/L Ex	<0.0500	1.08	M	1.8	1.10	1.00	110.0	6/14/06
As	6010B E	1 mg/L Ex	<0.050	1.08	M	1.8	1.10	1.00	110.0	6/14/06
Ba	6010B E	1 mg/L Ex	<1.00	18.2	M	2.2	18.6	20.0	93.0	6/14/06
Cd	6010B E	1 mg/L Ex	<0.0100	0.174	M	2.3	0.178	0.200	89.0	6/14/06
Cr	6010B E	1 mg/L Ex	<0.0500	0.932	M	3.2	0.962	1.00	96.2	6/14/06
Pb	6010B E	1 mg/L Ex	<0.050	0.840	M	1.3	0.851	1.00	85.1	6/14/06
Se	6010B E	1 mg/L Ex	0.07	0.25	M	3.9	0.26	0.200	95.0	6/14/06
Hg	7470A E	1 mg/L Ex	<0.00020	0.00100	M	3.0	0.00103	0.0010	103.0	6/15/06

LEGEND:

RPD% = $(|SAM - DUP| / ((SAM + DUP)/2)) * 100$ UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.

RPD% = $(|SPK - MSD| / ((SPK + MSD)/2)) * 100$ M in Duplicate/MSD column indicates MSD.

SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 512536 Client Sample ID: MEI 1



Page 1 of 1

Address: _____

FAX NUMBER: 208 769 4122

Notes

- 1) Ensure proper container packaging.
- 2) Ship samples promptly following collection.
- 3) Designate Sample Report Disposition

Abstract

1998

Table 1: - Matrix Type

1 - Surface Water, 2 - Ground Water
3 - Soil/Sediment, 4 - Runoff, 5 - On
6 - Waste, 7 - Other (Specify)

FOR EYE USE ONLY

SVL JOB #

123214

Saint Peter's University

[illegible]* Sample Project: ☐ Return ☐ Dispose ☐ Store (30 days)

WHICH LAB COPY YES CUSTOMER COPY

SVL-COC 1295

PART I

SVL ANALYTICAL, INC.

Push!
5 Day TAT

SDG #:

1400

0800

Received: 6/08/06

v3.0

PART II

SVL ANALYTICAL, INC.

SDG #:

[illegible]

1400

0800

Received: 6/08/06

v3.0

SVL ANALYTICAL, INC.
rent Gulch - Kellogg, ID 83837-0929

Page 1 of 1

ll invoice: SAME

RUSH! SOIL TCLP RCRA
SVL JOB No: 123214
Received: 6/08/06
Expected Due date: 6/15/06

Fax:

By Received	Sample Comments
6/08/06	Tests:TCLP METALS-RCRA
6/08/06	Tests:TCLP METALS-RCRA
POG 6/08/06	Tests:TCLP METALS-RCRA
POG 6/08/06	Tests:TCLP METALS-RCRA
POG 6/08/06	Tests:TCLP METALS-RCRA
POG 6/08/06	Tests:TCLP METALS-RCRA

Container temp not measured upon receipt.

s after job completion.
s, then you will receive a letter requesting disposal options.

if you have questions regarding the receipt of these samples. 6/08/06 14:45

TRANSMISSION VERIFICATION REPORT

TIME : 06/08/2006 15:10
NAME : SVL ANALYTICAL
FAX : 2087830891
TEL : 2087841258
SER.# : BROF3J495071

DATE, TIME
FAX NO./NAME
DURATION
PAGE(S)
RESULT
MODE

06/08 15:10
97694122
00:00:17
01
OK
FINE
ECM